

# Georgia Department of Natural Resources

205 Butler Street, S.E., Suite 1154 Atlanta, Georgia 30334

Lonice C. Barrett, Commissioner

Environmental Protection Division

Harold F. Reheis, Director

Hazardous Waste Management Branch

404/656-7802

February 27, 1997

CERTIFIED MAIL

RETURN RECEIPT REQUESTED

Mr. Larry Bradbury  
Manager - Engineering  
Environmental Services  
Atlanta Gas Light Company  
P.O. Box 4569  
Atlanta, GA 30302

Re: Corrective Action Plan  
Conditional Approval

Dear Mr. Bradbury:

The Georgia Environmental Protection Division (GAEPD) has reviewed Atlanta Gas Light Company (AGLC), *Corrective Action Plan for Former Manufacturing Gas Plant Site, Griffin, Georgia*, dated January 13, 1997 and *Remedial Investigation Report*, dated January 6, 1997. The Corrective Action Plan (CAP) is acceptable and approved provided that the following items are addressed.

## Corrective Action Plan

1. Page 2-2, 2.2 Site Description, Mr. Richard D. Slade owns part of the Griffin MGP site. Please submit document(s) to GAEPD that show that Mr. Slade has been informed of the situation at the Griffin site and that AGLC is taking full responsibility for all actions at the site.
2. Page 3-2, 3.1.3 Delineation of Soil Contamination: states that lead contamination in soils was found above the proposed cleanup level of 400 mg/kg at soil boring SB-09. Figure 3-1A lists selected inorganics, with lead at 434 mg/kg detected between the 12- and 14-foot depth. Figure 6-1 denotes areas of proposed excavation; however, SB-09 has been excluded from the deep excavation area. Please explain why the soil adjacent to SB-09 will not be excavated and evaluated.
3. Page 3-3, 3.2.2 Groundwater Sampling and Analysis, please revise the reference "Environmental Support Branch Standard Operating Procedure and Quality Assurance Manual, dated February 1991" for Region IV Environmental Services Division SOP to the most recent version, dated May 1996. The document is now titled "Environmental Investigations Standard Operating Procedures and Quality Assurance Manual."
4. The CAP states that monitoring well MW-7 was installed upgradient of MW-2. Monitoring well MW-2 was used for background comparisons in the original CAP (July 20, 1994) and the Remedial

Investigation (RI) states that MW-7 groundwater analysis was used as an estimate of the background concentrations. Please indicate which of these wells AGLC intends to use for comparison purposes with downgradient monitoring wells.

5. Page 3-5, 3.4 Water Use and Approximate Locations of Wells, this section needs to include the well(s) located at the Spalding County Hospital. Please include the correspondence letters and analytical data (October 6, 1994 and January 13, 1997) referring to the well(s) in the Appendix.
6. The CAP did not propose how the constituents found in groundwater that are not attributable to manufactured gas plants listed in Section 5.3 of the Site Investigation Volume 2, dated June 30, 1992 will be remediated to the levels required by the consent order. Removal and/or treatment in place of these constituents will need to be addressed in the remediation proposals; 2,4-Dinitrotoluene, acetone, bromoform, calcium, dichloromethane, Di-n-butyl phthalate, magnesium, potassium, sodium, tetrachloroethene, trichloroethene.
7. Although eight additional PAH's were detected in the surface soils at concentrations which may exceed background concentrations, they are not addressed separately since they are present in conjunction with constituents for which cleanup concentrations are proposed. The remediation plan must have provisions to ensure that all constituents will be remediated to the proposed cleanup standards.
8. Page 5-7, 5.3 Corrective Action Recommendation, AGLC recommends excavation of soils contaminated above HSRA Type 2 cleanup levels for selected inorganics and organics. Excavated soils will be segregated according to: 1) hazardous by characteristic; or 2) containing regulated constituents exceeding soil cleanup criteria. Groundwater impacted will be treated through intrinsic bioremediation, the assumption being that once the source areas are removed, natural attenuation will remediate remaining constituents in the groundwater. The highest concentration of organic constituents detected in groundwater was tetrachloroethane at 0.25 mg/l in MW-5 and the highest inorganic concentration detected above a Maximum Concentration Limit (MCL) was lead at 0.0687 mg/l in MW-8. The MCL for lead is the treatment technique action level of 0.015 mg/l. Cadmium was also detected in downgradient off-site well MW-8 at a concentration of 0.0134 mg/l, above the MCL of 0.005 mg/l. Intrinsic bioremediation may be a viable alternative for the organic constituents in the plume, but natural attenuation may not be an effective treatment method for inorganics detected above MCLs. Documentation of this effectiveness should be provided with the revised CAP. Also, a discussion of how this groundwater remediation technology complies with terms of consent order should be included.
9. There was no mention of the number of samples collected to characterize the shallow and deep excavated soils. This information is necessary to evaluate the sampling approach and should be provided in the final corrective action plan.
10. Page 6-2, 6.2.1 Shallow Excavation: "After removal of the designated surface soils, the surface of the excavated area will be visually examined for the presence of by-product-like material. If areas of visual contamination are noted, the excavation will continue until visually clean surfaces are exposed. GAEPD agrees with visual observation for continuing with the excavation activities; however, confirmation samples from the sidewalls and floor of the excavation are necessary in each excavation,

with a minimum of three (3) samples per excavated area (as indicated in Figure 6-1).

11. Page 6-2, 6.2.1 Shallow Excavation: "Where the shallow excavations are for the remediation of soils containing lead and/or arsenic, confirmation samples in these areas will be collected on 20-foot centers and analyzed for lead and arsenic only, in the manner described for deep excavation." Analyzing shallow excavated soil samples using only indicator parameters may not be adequate to confirm the removal of all target constituents given the array of constituents present. To ensure that sufficient documentation of the remediation is accomplished, please characterize the excavated site by analysis of: Total Metals, Total Volatiles, Total Base neutral/Acid extractables, Ignitability (EPA method 1020), Corrosivity (EPA method 9040/9045), Reactivity (SW-846). A minimum of three (3) confirmation samples or 20 percent of the excavated soil confirmation samples, whichever is greater, should be analyzed by these methods.
12. Page 6-4, 6.2.3 Site Control, the CAP states that during excavation activities, volatiles will be monitored using a photoionization detector (PID) and colorimetric tubes. In the next submittal, please specify the chemical used as the calibration standard for the photoionization detector. Isobutylene, which is commonly used, has a reduced sensitivity and may not be appropriate. Toluene's sensitivity is much closer to a 1:1 ratio and hence serves as a more representative standard for calibration. Also, please specify the voltage of the bulb used in the PID and indicate whether the voltage is adequate to sufficiently characterize the volatiles being screened in the field.
13. Page 6-5, Backfilling: please clarify this sentence "The offsite soils used for backfill will be pre-qualified for acceptance as fill material using both environmental and geotechnical criteria." GAEPD requires that composition of the backfill should not have concentrations of constituents greater than the background concentrations of soils onsite.
14. Page 6-6, 6.4 Soil Verification Sampling: "The number and location of verification samples will be determined in the field based on visual observation and professional judgment. Deep excavation soil confirmation samples will be analyzed for benzene using EPA Methods 8240, lead using EPA Method 7421, arsenic using EPA Method 6010, and PAHs using EPA Method 8270." Analyzing deep excavated soil samples using only indicator parameters is not appropriate. Please refer to comment [11] for the appropriate array of constituents for which to analyze in order to document the effectiveness of the remediation.
15. Horizontal delineation of soil contamination and vertical delineation of subsurface soil contamination require further investigation. Limited surface soil and subsurface soils of the former apartment building and gas holder No. 3 were collected. These areas need additional sampling unless justification can be provided for not sampling these areas. Also, please explain why no subsurface soils beneath the vacated day care building were sampled and analyzed. Based on analyses from soils adjacent to the building, soil below the building is assumed to be contaminated. These soils in these areas will require remediation unless the soils are demonstrated to be below cleanup levels. Please submit documentation that these analyses are below the cleanup levels in your resubmittal.
16. Pages 6-7 and 6-8, Groundwater Monitoring: "Once the concentration of benzene and the dissolved-phase concentrations of the metals have been analyzed and found to be below their MCLs for a period of six months, monitoring will cease and the wells will be properly decommissioned. If, after three

years of monitoring, the concentrations remain at or above the MCL, GAEPD will be contacted and the need for further remedial actions will be determined, based on the results of the field measurements." GAEPD requires that semi-annual groundwater sampling analysis be conducted for volatiles, semi-volatiles and inorganic constituents encountered in soil and groundwater analysis during Site Investigation (June 30, 1992), Remedial Investigation and CAP investigations. Groundwater monitoring will include on-site and off-site wells. AGLC will be allowed to cease monitoring activities, if the concentrations for all constituents remain below the MCLs for three consecutive years. Also, the GAEPD expects to receive semi-annual reports, which describe and document the effectiveness of the ongoing remedial action.

17. Page 7-1, "However, if the concentrations of contaminants are below the MCLs for a period of six months (two consecutive quarterly samples or two consecutive semi-annual samples), the monitoring wells will be properly decommissioned and a corrective action completion report will be prepared and submitted to GAEPD." Please refer to comment [16].
18. Table 3.2, needs to indicate which well is selected as the background well. The Consent Order No. EPD-HW-1010 requires to remove or treat in place impacted groundwater to concentrations below the approved MCLs or background for constituents discovered. Zinc and acetone do not have an established MCL; therefore, background for these constituents will need to be determined.
19. Figure 6-1, the CAP proposes excavation of soils to a depth of two feet for the area north and northwest of the day care center. Figure 6.2 from the original CAP does not include this area, but proposes shallow excavation for soils southwest and south of the day care center. Does AGLC intend to evaluate the groundwater in the northern portion of the property? If the same groundwater flow regime for the southern half of the property is assumed to exist in the northern half of the property, the groundwater from the northern portion has not previously been evaluated. The former repair shop and garage were located at the site of the day care center and groundwater in the vicinity of this former repair shop has not been characterized. Collection of groundwater samples from temporary borings using direct push technology are acceptable for screening purposes.
20. To ensure that the proposed natural bioremediation program is working effectively, a monitoring program encompassing both on-site and off-site wells for an extended period of time is necessary. AGLC has proposed quarterly sampling for one year and semi-annual sampling for two years. A longer monitoring period is necessary to ensure that constituent concentrations are diminishing, as AGLC projects. A period of five years with semi-annual sampling is recommended, at which time a review will be conducted by GAEPD to ascertain if additional groundwater monitoring is required. Installation of an active remediation treatment method incorporating groundwater containment for all impacted groundwater will be required if constituent concentrations increase during the monitoring period. AGLC's proposal to use only benzene as criteria for ceasing groundwater monitoring is not consistent with the intent of Consent Order No. EPD-HW-1010.
21. Page 6-7, 6.6 Groundwater Monitoring, the CAP states that long term monitoring will be performed on existing monitoring wells MW-1, 3, 5, and 6 and two new wells to be installed after the source removal. Please define "long term monitoring" as used in the first paragraph of this section. Excavation is proposed for areas containing monitoring wells MW-1, 4, and 5. MW-1 is listed as an equivalent replacement for monitoring purposes. Does AGLC also intend to replace wells MW-4 and

equivalent replacement for monitoring purposes. Does AGLC also intend to replace wells MW-4 and 5? Please indicate at what depth these two new wells will be installed after source removal.

22. GAEPD recommends that silt fences be used whenever possible to restrict sediment migration to ditches, curbs of adjacent streets and streams. Also, AGLC should take steps to minimize tracking of soils off-site onto roadways by trucks and earthmoving equipment. AGLC should also take steps to minimize the migration of constituents onto adjoining property and waterways.

#### Corrective Action Plan, Appendix A

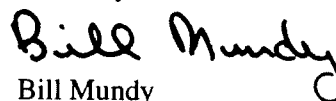
1. Page 2, Appendix A, the first two sentences of the third paragraph state - "Although the site is currently not utilized, it was assumed that the site is redeveloped for residential use. The potential exposure of children at a future day care center built on the site was evaluated." Children at a day care center were the only receptors considered, however, extrapolating from the first sentence of the two quoted above it would also be reasonable for adult and child residential receptors to be considered and they should be included as receptors in this corrective action plan.
2. Georgia policy regarding groundwater in the State of Georgia, can be found in the *Georgia Environmental Protection Division Guidance for Selecting Media Remediation levels at RCRA Solid Waste Management Units*, and states "...in Georgia all groundwater is considered a potential source of drinking water." Therefore, the statement made on page 2 of Appendix A that: "Since use of groundwater for potable water supply is prohibited at the site, exposure will be limited to soil." - is incorrect. This means, as stated in our letter of May 14, 1996 concerning this site, that strong justification must be provided that exposure to groundwater will not occur in the future. The city ordinance prohibiting the installation of drinking water wells is not considered good enough justification; therefore, the groundwater exposure pathway *must be considered* for all future receptors at the site.
3. The background concentrations for antimony and cadmium exceeded the Table 2, Appendix III values of the Rule. 391-3-19.07(6)(c) of the Rule states: "Concentrations at any point above the uppermost groundwater zone in soil that has been affected by a release shall not exceed the concentrations given in Table 2 of Appendix III..." Therefore, concentrations of any of the metals listed in Table 2 of Appendix III will have to be cleaned up to those numbers to successfully meet a Type 1 standard. Following the above stated rule the values indicated in page 2 of Table 1 in Appendix A under the column titled Type I RRS should be the values taken from Table 2, Appendix III of the rule; e.g., the values for antimony and cadmium should be 4 and 2 mg/kg respectively.
4. Table 2, Appendix A, either equation 6 or equation 7 as presented in RAGS part B must be used for the determination of Type 2 RRSs for ingestion and inhalation of industrial soil, as is specified in Rule 391-3-19.07(7)(c)(2-3). The Rule does not allow a deviation from use of these equations and numbers generated using the equations presented on this page should be generated using the above mentioned equations.
5. A statement is made in the third paragraph on Page 8 of Appendix A that: "Corrective action would be required if redevelopment includes a day care center." This does not agree with the message of corrective action included in Section 7 and should be changed to agree with that message.

Remedial Investigation Report

1. Page 2-4, please list the TCL and TAL constituents.
2. Page 4-8, states that "The extent of the regulated substances has not been defined along the northern boundary, but it is estimated that it extends to the curb line. This area will be defined to background concentrations during corrective action implementation." Please describe in detail what AGLC plans to do to define the northern boundary, according to background concentrations.

To ensure that AGLC is afforded the opportunity to complete the remediation as expeditiously as possible, GAEPD approves the plan with the corrections, clarifications, modifications, and descriptions stated above. Further, to avoid any confusion at a later date, GAEPD requests that AGLC provide a narrative discussion regarding how the steps outlined in the CAP comply with the terms of Consent Order No. EPD-HW-1010 when AGLC's compliance with the order is not transparent. Finally, rather than delaying implementation of the CAP until revisions are made, GAEPD is willing to wait until the excavation and site restoration are completed for AGLC to submit its revised CAP. At a minimum, the revised CAP will include documentation of all the work completed to date and a schedule for completing the unfinished work concerning groundwater remediation and monitoring. Based on GAEPD's understanding of AGLC's plans for the site, the revised CAP should be submitted no later than June 1, 1997. If you have any questions or comments, please contact James Sliwinski at (404) 656-7802.

Sincerely,



Bill Mundy  
Program Manager  
Hazardous Waste Management Branch